

FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

Please fill in the highlighted areas
all sections (IA, IB, IC, etc.) must be addressed or the application will be considered invalid

I. APPLICANT INFORMATION

- A. Applicant Name: Montana Fish, Wildlife & Parks (Ron Spoon)
- B. Mailing Address: P.O. Box 1137
- C. City: Townsend State: MT Zip: 59644
Telephone: 406-266-4237 E-mail: rspoon@mt.gov
- D. Contact Person: Ron Spoon
Address if different from Applicant: (SEE ABOVE)
City: _____ State: _____ Zip: _____
Telephone: _____ E-mail: _____
- E. Landowner and/or Lessee Name (if other than Applicant): Daryl Drake, John Breternitz, Shawn Dustin, and Alan Carroll (See Contact Information in Attachment A).
Mailing Address: _____
City: _____ State: MT Zip: _____
Telephone: _____ E-mail: _____

II. PROJECT INFORMATION*

- A. Project Name: Hells Canyon Creek Water Lease
River, stream, or lake: Hells Canyon Creek
Location: Township: T2S Range: R6W Section: 34
Latitude: 45 37.408 Longitude: 112 19.988 within project (decimal degrees)
County: Madison
- B. Purpose of Project:
Prevent stream dewatering to maintain trout spawning and rearing habitat.
- C. Brief Project Description: _____

Hells Canyon Creek instream flow renewal

In 1995, three landowners converted open ditches into a single gravity pipeline system at Hells Canyon Creek. FWP and NRCS provided cost share to this project and FWP leased water for instream use for 20-years. FWP negotiated a 3-year extension (2016-19) of the water lease to evaluate system improvements and pipeline allocation issues with the three water users. FWP and water users agreed to terms for a long-term renewal of the water lease (10 years with a likely 10-year extension to total 20 years). In addition to flow improvements, the gravity pipeline was equipped with a fish screen which prevented the loss of thousands of trout, and landowners will continue to operate/maintain this screen during the term of the water lease.

See Attachment B for additional details related to project description, history of past water leasing, and monitoring results related to the 2017 center pivot installation.

D. Length of stream or size of lake that will be treated:

Approximately 1 mile of habitat below the irrigation diversion will have improved stream flow. The spawning run in the lower 4 miles will benefit by eliminating fish loss to the irrigation system.

E. Project Budget:

Grant Request (Dollars): \$ 47,500

Contribution by Applicant (Dollars): \$ 0 In-kind \$ 0
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ In-kind \$ 0
(attach verification - See page 2 budget template)

Total Project Cost: \$ 50,000 (unofficial matching funds of \$123,919 not included)

F. Attach itemized (line item) budget – see template

Attach **specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*** (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. **Attach land management & maintenance plans that will ensure protection of the reclaimed area.**

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Rainbow Trout, Rainbow/Cutthroat hybrids, Brown Trout, and a variety of other non-game species such a sculpins, longnose dace, and sucker species.

B. How will the project protect or enhance wild fish habitat?:

Improved streamflow below the screened pipeline diversion results from significantly increased efficiency of the irrigation system. Water rights for three users totaling 7.3 cfs are combined in a pipeline with a capacity of approximately 2.5 cfs. In addition, water users provide guaranteed minimum flows to the stream during rainbow trout egg incubation (1.60 cfs) and trout fry migration (0.25 cfs). The legally protected instream flow resulting from the project is 1.12 cfs. Monitoring of streamflow from 1996 through 2018 document that the stream was never dewatered during the previous water lease term.

- C. Will the project improve fish populations and/or fishing? To what extent?:

Loss of both migrating juvenile trout and spawning trout to the irrigation diversion has been eliminated since 1995. This lease renewal will ensure this continues. In addition, juvenile trout abundance was monitored below the diversion most years after 1995, and juvenile trout abundance remained healthy throughout the period. This spawning run provides important recruitment to the Jefferson River where fish are available to anglers. Fishing in Hells Canyon Creek is rare due to the small size of the stream.

- D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

The rainbow trout fishery has improved in the Jefferson River during the past 10 years due to a variety of factors. FFIP projects at Willow Springs, Parson's Slough, and the water lease at Hells Canyon Creek have contributed to the fish population increase, but it is difficult to determine the relative contribution of each of these projects. Rainbow trout abundance in the Jefferson River near Waterloo (downstream of Hells Canyon Creek) improved from below 400 trout/mile to over 1000 trout/mile between 2004 and 2014.

- E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

Landowners are responsible to maintain the pipeline and intake screen for the duration of the project.

- F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

The chronic streamflow depletion of Hells Canyon Creek (and associated fish loss to irrigation systems) was due to past allocation of irrigation water without providing water for instream uses. This water lease provides water to both irrigation and instream uses without reducing water delivered to croplands.

- G. What public benefits will be realized from this project?:

The gravity irrigation pipeline provides efficient delivery of water to croplands while enhancing streamflow for the wild and self-sustaining fishery. Improved fishing in the Jefferson River and maintained agricultural production benefits the local landowners and the local economy.

- H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No. Three landowners and water right owners affected by the lease are partners to the project. This project is intended to benefit both the fishery and associated landowners.

- I. Will the project result in the development of commercial recreational use on the site?: (explain):

No. Currently, there are no commercial operations related to fisheries on Hells Canyon Creek, and none are anticipated with the completion of this project. Outfitter related fishing trips of the Jefferson River near Hells Canyon Creek are currently taking place, and will likely continue in the future.

J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:


for Ron Spoon

Date: November 29, 2018

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To: Montana Fish, Wildlife & Parks
Fisheries Division
PO Box 200701
Helena, MT 59620-0701

E-mail To: Michelle McGree
mmcgree@mt.gov
(electronic submissions MUST be signed)

Incomplete or late applications will be rejected and returned to applicant.
Applications may be rejected if this form is modified.

*****Applications must be signed and *received* by the Future Fisheries Program Officer in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

Hells Canyon Creek instream flow renewal
BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL
<u>Personnel</u>								
Survey	0			\$ -				\$ -
Design	0			\$ -				\$ -
Engineering	0			\$ -				\$ -
Permitting	0			\$ -				\$ -
Oversight	0			\$ -				\$ -
Labor	0			\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
<u>Travel</u>								
Mileage	0			\$ -				\$ -
Per diem	0			\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
<u>Water Lease</u>								
Payment to Landowners for Water Lease	10 Years		\$5,000.00	\$50,000.00	\$47,500.00		\$2,500	\$ 50,000.00
				\$ -				\$ -
								\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 50,000.00	\$ 47,500.00	\$ -	\$ 2,500.00	\$ 50,000.00
<u>Equipment</u>								
	1			\$ -	-			\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
<u>Mobilization</u>								
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -

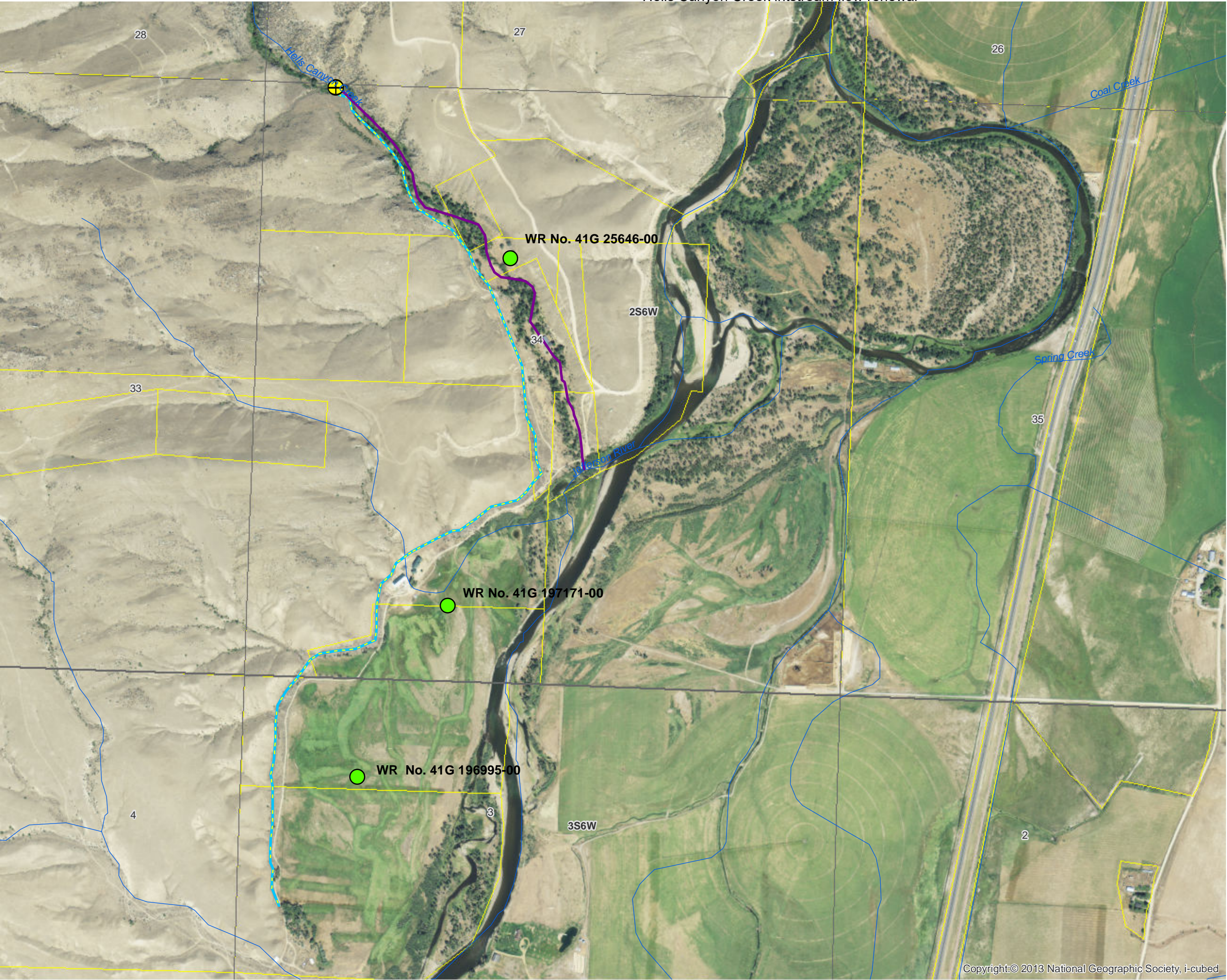
Hells Canyon Creek instream flow renewal
BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

TOTALS	\$ 50,000.00	\$ 47,500.00	\$ -	\$ 2,500.00	\$ 50,000.00
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*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

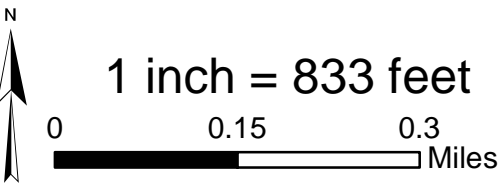
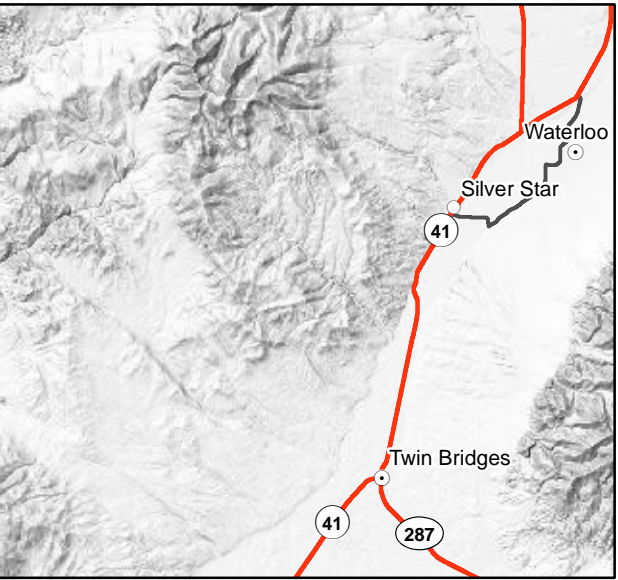
CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Verified? (Y/N)
George Grant TU (lease payment)	\$	\$2,500.00	\$2,500.00	NO
NRCS EQUIP Center Pivot (Unofficial Match 2017)	\$ -	\$71,639.00	\$ 71,639.00	Yes
Landowners (Carroll) Center Pivot (Unofficial Match 2017)	\$ -	\$52,279.00	\$ 52,279.00	Yes
	\$ -		\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	



Hells Canyon Creek Water Lease Renewal

Legend

- POD
- Protected_Reach
- HCC_Pipeline
- Streams
- Sections
- Townships and Ranges
- Cadastral



Hells Canyon Creek instream flow renewal

ATTACHMENT A

Landowner Contact Information

Alan Carroll
15201 Rd. 25
Dolores, CO 81323-9447
Phone (970) 570-1683
Email: kooltez@gmail.com

Shawn and Janet Dustin
PO Box 531
Twin Bridges, MT 59754-0531
Phone: (406)684-5255
Email dustinfam@gmail.com

Hells Canyon Creek, LLC.
c/o Daryl Drake and John Breternitz
1519 Foster Dr.
Reno, NV 89509-1211
Phone for Daryl (775)721-4071
Phone for John (775) 742-4413
Email: daryledrake@gmail.com; johnbreternitz@gmail.com

Hells Canyon Creek instream flow renewal
ATTACHMENT B: Evolution of the Hells Canyon Water Project

Prior to 1995, an open ditch system near the mouth of Hells Canyon Creek severely depleted streamflow and entrained over 30% of the migrating rainbow trout fry returning to the Jefferson River. Three water users began using a gravity pipeline system, and fish friendly irrigation diversion, with funding support by NRCS and FWP in 1995. A 20-year water lease with FWP was implemented from 1995-2015, and the project successfully served agricultural and fishery needs.

Negotiations to renew the lease during 2015 did not arrive at a successful long-term solution due to gravity pipeline allocation issues. A 3-year extension was agreed upon and lease funding was obtained to work through pipeline allocation issues. In addition, a system upgrade was implemented in 2017. This upgrade included irrigation diversion repairs, and installation of a more efficient center pivot for one user beginning in 2017.

Based on the modifications of the system during the 3-year period (2016-19), a renewal of the lease for the upcoming 10 years (with an automatic renewal after 10 years) is proposed. In order to assist each of the three landowners with system efficiency upgrades (Carroll in 2017, and future improvements for Dustin and Hells Canyon Creek, LLC.), an increase in the annual lease payment is proposed for the upcoming 10 years. The timeline below summarizes the timing of project events.

Instream Flow Lease Timeline:

1996-2015	Original instream flow lease (\$45,000 of FWP funds contributed).
2015	Lease Renewal Negotiations (Pending irrigation improvements and pipeline allocation issues prevented long term commitments).
2016-2019	Lease extension secured (bought time to negotiate and install new center pivot).
2017*	NRCS implementation of the pivot system (quicker than expected).
2019-2029	Anticipated instream flow renewal for 10 years.
2029-2039	Anticipated renewal depending on new costs and funding availability.

*We expected pivot implementation and instream flow renewal to be completed concurrently in 2018 but the NRCS project implementation was expedited. Hence, the \$123,919 cost of the pivot is considered an unofficial match to the proposed instream flow lease due to timing issues.

Hells Canyon Creek Flow after 2017 pivot installation:

The benefits of replacing Carroll's wheel lines with a center pivot were evaluated (Figure 1). Wheel line operation required essentially full-time operation using about 1.8 to 2.0 cfs daily prior to 2017. The new center pivot required 135 acre-feet of flow over 98 days for an average flow of 0.7 cfs per day. The exceedance of minimum flows required by the water lease during 2017 was, in part, due to the more efficient irrigation system (Figure 1). Despite a relatively dry irrigation season, instream flow remained well above FWP's required minimum flow of 0.25 cfs, and bottomed out in late August near FWP's protected flow of 1.12 cfs.

Hells Canyon Creek instream flow renewal

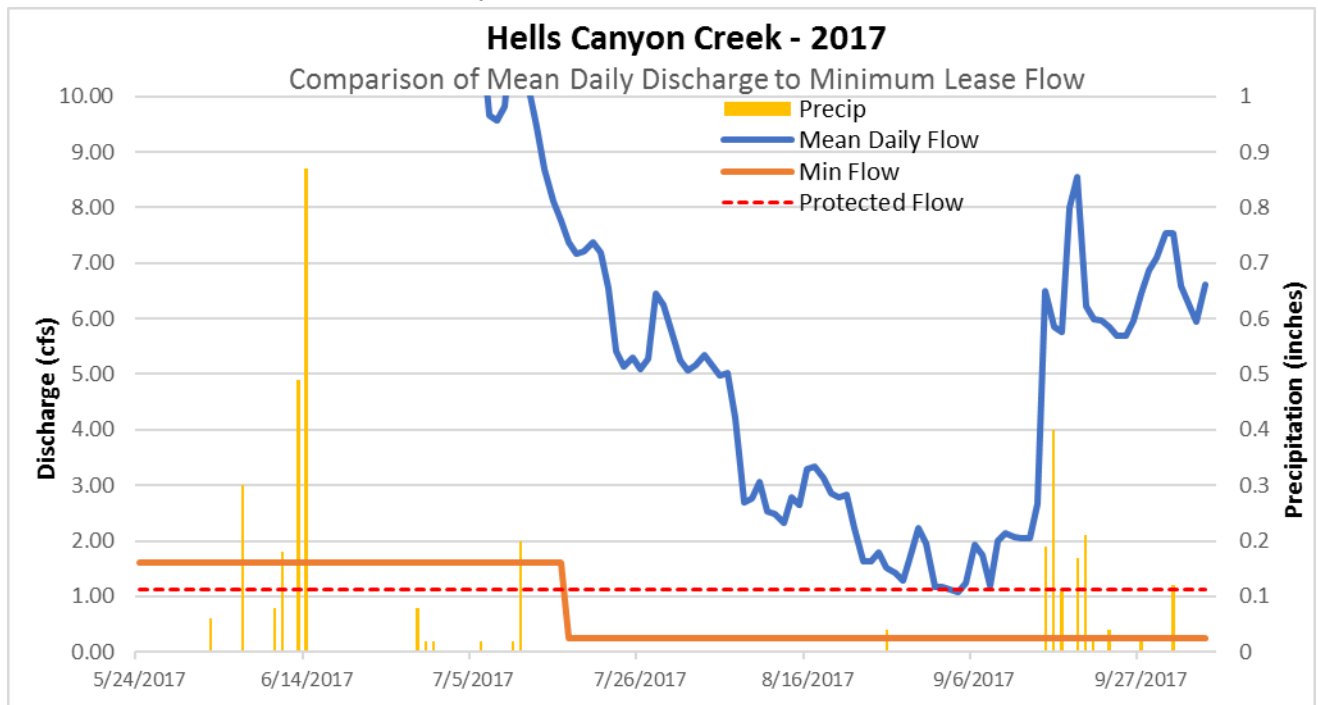


Figure 1. Mean daily discharge of Hells Canyon Creek near mouth compared to minimum flow required by lease agreement during 2017.

Irrigation Water Management Improvements:

Detailed monitoring of water application and soil moisture for the Carroll Pivot was conducted in 2017 (Figure 2). Although this center pivot project was implemented during the temporary water lease extension (2016-19), we believe this project is an important component of the future management of the irrigation system. In order to implement the system, a \$123,919 investment was made, including \$52,279.29 from the senior water right user. We intended this to be a cost match for the water lease proposed from 2019-2029, but the timing of implementation has complicated match requirements. Therefore, the investment by NRCS and the landowner are considered an unofficial match.

During 2017, the gross irrigation provided by the system was 20.59 inches of water from 27 May to 1 September. Soil moisture (4 feet depth) was below the management allowed depletion (MAD) frequently between 3 July and 30 August. Harvest dates for the Barley crop were 29 July and 1 September.

A total of 137.5 acre-feet of water was applied to the crop for 98 days (27 May to 1 September) for an average of 1.4 ac-ft/day (0.7 cfs average per day). The new irrigation system provided nearly 1 cfs of water savings to the benefit of Hells Canyon Creek.

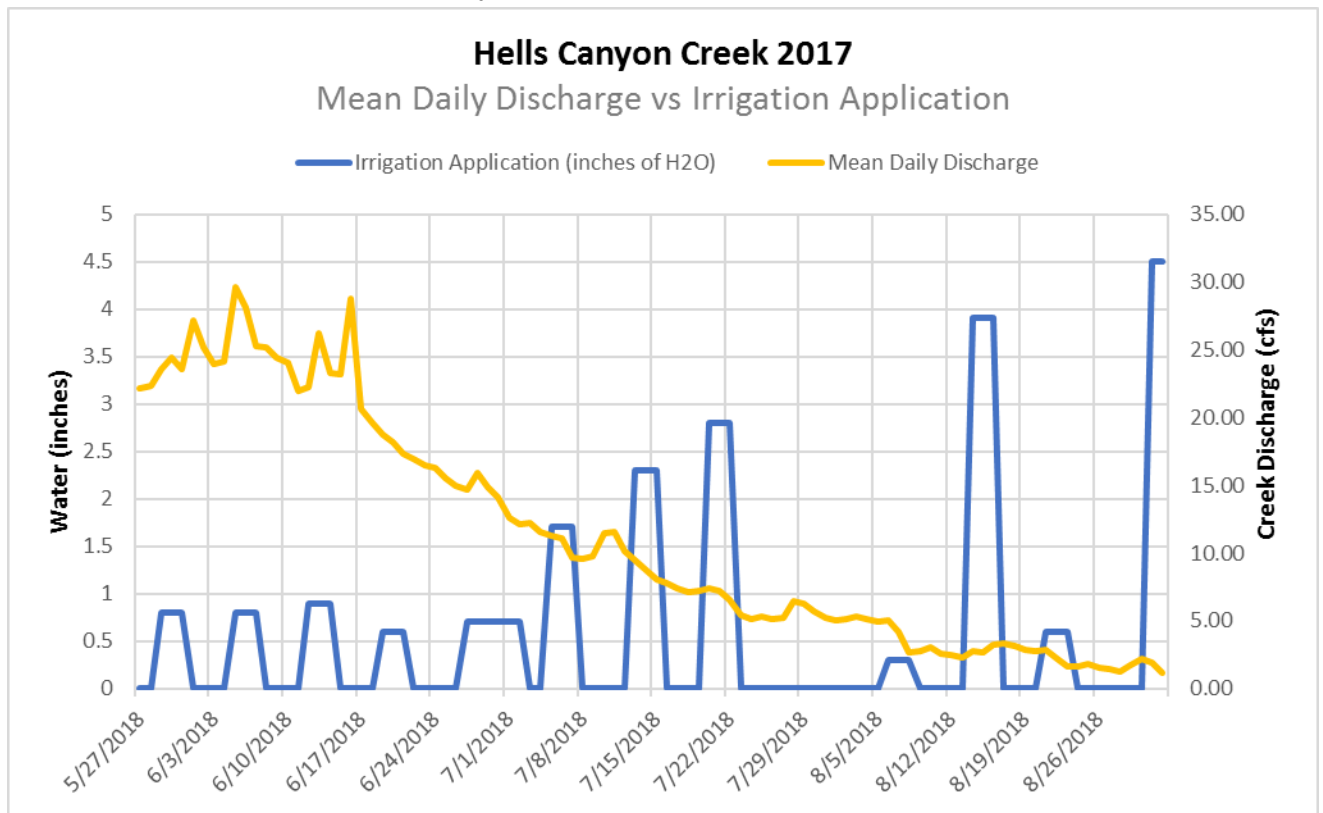


Figure 2. Hells Canyon mean daily discharge and irrigation application trend at the Carroll Pivot during 2017. *Pivot “on-dates” assumed to be 3-day blocks.

ATTACHMENT C

FUTURE FISHERIES IMPROVEMENT PROGRAM

SUPPLEMENTAL INFORMATION SHEET FOR
WATER LEASING OR WATER SALVAGE PROJECTS

The following additional information is requested to supplement the Future Fisheries Application for projects associated with water leasing or water salvage. Please complete this supplemental form and submit it as part of the Future Fisheries Grant Application.

- 1. Please complete the following table describing the water right(s) associated with the proposed project.** Note: Much of this information can be obtained either from your own water rights records or online at <http://www.dnrc.state.mt.us/wrd/home.htm> (choose “water rights” and then select an index to look up applicable claims)

RIGHT NUMBER; WATER SOURCE	POINT OF DIVERSION	QUANTIFIED FLOW (CFS)/ VOLUME (AF)/ IRRIGATED ACRES	PRIORITY DATE; PERIOD OF USE	RELATIVE PRIORITY ON WATER SOURCE	PURPOSE OF WATER RIGHT	OTHER CLAIMED ON THE STREAM SENIOR TO YOUR LISTED CLAIMS
41G 196995-00; Hells Canyon Creek	NWNWNW Sec. 34, Twp 2S, Rge 6W NWSENW Sec. 34 Twp 2S, Rge 6W	3.64 cfs/1,571.2 acre-feet/120 acres irrigated	12/31/1884; April 1 through November 4	1 st priority of three claims.	Irrigation	0
41G 197171-00; Hells Canyon Creek	NWNWNW Sec. 34, Twp 2S Rge 6W NWSENW Sec. 34 Twp 2S Rge 6W	2.66 cfs/921 acre-feet/36 acres irrigated	8/23/1889; April 30 through October 19	2 nd priority of three claims	Irrigation	3.66 cfs
41G 25646-00; Hells Canyon Creek	NWNWNW Sec. 34, Twp 2S, Rge 6W SENW Sec. 34, Twp 2S, Rge. 6W	1.00 cfs/364.32 acre-feet/17 acres irrigated	8/29/1912; May 1 through October 31	3 rd priority of the three claims	Irrigation	6.32 cfs

- 2. In the last 10 years, has your full water right amount regularly been available at your point of diversion throughout your period of use?**

Yes

Have you ever made “a call” on junior water users to obtain the water you needed (through a water commissioner or otherwise)?

Yes, The senior user has requested junior users to reduce withdrawal approximately 3 times in the last twenty-three years.

3. Please describe or include a summary of any measurements of the amount of water you have regularly diverted and how much typically flows by your diversion during different time periods.

The capacity of the irrigation pipeline is approximately 2.5 cfs, and the pipeline flow rate has not been routinely monitored. In 2017, a center pivot was added along with a meter to measure pipeline flow. The combined total of the three water rights using this pipeline is 7.3 cfs. Of this, the Department of Natural Resources and Conservation (DNRC) has approved 4.8 cfs to of salvage water to be available at the point of diversion and up to 1.12 cfs to be protected below the point of diversion.

While the lease agreement sets minimum guarantees of 1.6 cfs flows past the headgate from April 1 to July 15, and a minimum 0.25 cfs flows past during critical periods of summer irrigation (July 15 to November 4), FWP has routinely monitored flows in excess of these guaranteed minimums . FWP continues to monitor streamflow to determine lease compliance.

4. Has your local FWP fish biologist confirmed that your leasing/salvage project addresses a stream flow problem that significantly limits the fishery?

Yes

5. How much actual water (often different than just the remainder of your water rights) will be added to the stream through completion of your project?
1.12 cfs.

During early summer when flow is relatively abundant, the pipeline can reduce diversion by approximately 2-5 cfs compared to the old, open ditch system. During extremely low flow periods when the stream may only carry a total of 3-4 cfs, the lease and associated pipeline prevent complete dewatering of the stream. A center pivot was added to the system in 2017, which has resulted in a considerable water savings. While the agreement establishes a guaranteed minimum of 0.25 cfs, over the past two years, FWP has routinely monitored flows well of excess of the 0.25 cfs minimum.

What length of stream will benefit from this additional flow? (Note: Under certain circumstances, senior water can be protected legally from diversion by downstream junior users.)

Approximately 1 mile of stream is protected between the pipeline diversion and the mouth of the stream.

6. Is there a water commissioner on your stream?

No

Are you willing to actively assist in monitoring and/or protecting the conserved water instream? Yes / No (Please circle one and describe)

FWP will continue to monitor the flow. Landowners can regulate the intake structure which is designed with a bypass that ensures the lease quantities are provided before entering the pipeline system.